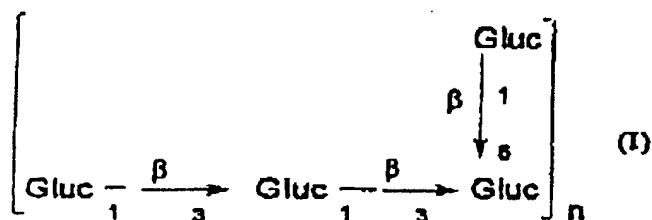


CLAIMS

1. Medicine, characterized in that it comprises, as an active principle, an effective amount of at least one
5 oligosaccharide substance which is capable of modifying apoptosis dysfunctions and which optionally comprises, on at least some of its individual units, at least one substituent of the group comprising sulfate, methyl and acetyl groups, said substance being chosen from the group
10 comprising :

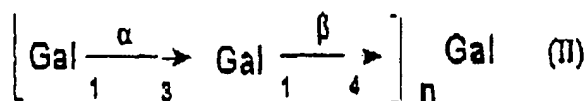
- the oligosaccharides which are derived, by enzymatic or chemical process, from the polymers of the group comprising (1→3)-β-glucans which optionally comprise (1→6)-β- branching, and
- 15 - the oligosaccharides which are derived, by enzymatic or chemical process, from sulfated galactans, in particular carrageenans, agars and porphyrans.

2. Medicine, characterized in that it comprises, as an active principle, an effective amount of at least one
20 oligosaccharide which is capable of modifying apoptosis dysfunctions and which satisfies the formula:



in which n represents an integer from 1 to 50, preferably from 5 to 10, and in which the number of branches varies from 0 to 3 per repeat unit.

25 3. Medicine, characterized in that it comprises, as an active principle, an effective amount of at least one repeat disaccharide which is capable of modifying apoptosis dysfunctions and which satisfies the formula :



5

in which n represents an integer from 1 to 50, preferably from 1 to 20, at least some of the repeat disaccharides of formula (II) possibly comprising one or more sulfate groups.

- 10 4. Medicine, characterized in that it comprises, as an active principle, an effective amount of the product which is capable of at least partially inhibiting apoptosis and which is obtained by hydrolysis from sodium
15 iota-carrageenate, this product consisting of a mixture of oligo-iota-carrageenans which is referred to as I₉, which has a total saccharide content (determined according to Tillmans and Philippi) of 62%, and which has a distribution profile by size, which is estimated by electrophoresis on polyacrylamide gel according to
20 Zablakakis and Perez, of

	iota-neocarratetraose	(DP 2)	8-12%
	iota-neocarrahexaose	(DP 3)	23-27%
	iota-neocarraoctaose	(DP 4)	18-22%
	iota-neocarradecaose	(DP 5)	13-17%
25	iota-neocarradodecaose	(DP 6)	8-12%
	oligo-iota-carrageenan	(DP 7)	3- 7%
	oligo-iota-carrageenans consisting of 8 to 15 repeat disaccharides (DP 8-15) 13-17%.		

5. Medicine, characterized in that it comprises as
30 an active principle, an effective amount of the product which is capable of activating apoptosis dysfunctions, and which is obtained by acidic aqueous extraction from brown algae and more particularly from a brown alga named *Laminaria digitata*, this product consisting of a mixture
35 of oligo-(1→3)-β-glucans which are referred to as L₁₁ and

comprise from 1 to 50, preferably from 20 to 30, saccharide units, the product in question having the NMR spectrum shown in Figure 1.

6. Medicine, characterized in that it comprises, as
5 an active principle, an effective amount of the product which is capable of activating apoptosis dysfunctions and which consists of fraction DP 7 of the product I₉.

7. Method for preparing a medicine for treating
apoptosis dysfunction, characterized in that a
10 pharmaceutical composition comprises at least one of the active principles of the medicine according to at least one of Claims 1 to 6.

8. Use, with a view to preparing a medicine for
treating apoptosis dysfunctions, of at least one of the
15 oligosaccharide substances which optionally comprise, on at least some of their individual units, at least one substituent of the group comprising sulfate, methyl and acetyl groups, said substances which are capable of modifying apoptosis dysfunctions being chosen from the
20 group comprising

- the oligosaccharides which are derived, by enzymatic or chemical process, from the polymers of the group comprising (1→3)-β-glucans which optionally comprise (1→6)-β- branching, and

25 - the oligosaccharides which are derived, by enzymatic or chemical process, from sulfated galactans, in particular carrageenans, agars and porphyrans.

9. Use, with a view to preparing a medicine for
treating apoptosis dysfunctions, of the oligosaccharides
30 of formula (I) and of those of formula (II).

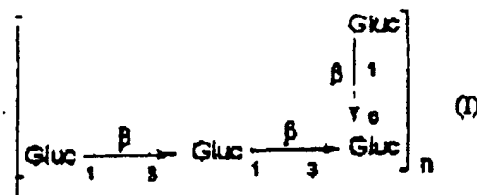
10. Use of the products which are referred to as I₉ and L₁₁ and of the product constituting fraction DP 7 of the product I₉ with a view to preparing medicines for treating apoptosis dysfunctions.

CLAIMS

1. Medicine, characterized in that it comprises, as an active principle, an effective amount of at least one
5 oligosaccharide substance which is capable of modifying apoptosis dysfunctions and which optionally comprises, on at least some of its individual units, at least one substituent of the group comprising sulfate, methyl and acetyl groups, said substance being chosen from the group
10 comprising :

- the oligosaccharides which are derived, by enzymatic or chemical process, from the polymers of the group comprising (1→3)-β-glucans which optionally comprise (1→6)-β- branching, and
- 15 - the oligosaccharides which are derived, by enzymatic or chemical process, from carrageenans, from agars and from porphyrans.

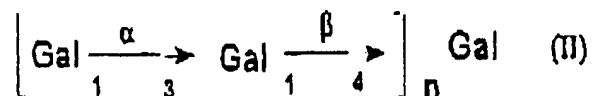
2. Medicine, characterized in that it comprises, as an active principle, an effective amount of at least one
20 oligosaccharide which is capable of modifying apoptosis dysfunctions and which satisfies the formula :



in which n represents an integer from 1 to 50, preferably from 5 to 10, and in which the number of branches varies
25 from 0 to 3 per repeat unit.

3. Medicine, characterized in that it comprises, as an active principle, an effective amount of at least one

repeat disaccharide which is capable of modifying apoptosis dysfunctions and which satisfies the formula :



6. Medicine, characterized in that it comprises, as
 5 an active principle, an effective amount of the product which is capable of activating apoptosis dysfunctions and which consists of fraction DP 7 of the product I, according to Claim 4.
7. Method for preparing a medicine for treating
 10 apoptosis dysfunctions, characterized in that a pharmaceutical composition comprises at least one of the active principles of the medicines according to at least one of Claims 1 to 6.
8. Use, with a view to preparing a medicine for
 15 treating apoptosis dysfunctions, of at least one of the oligosaccharide substances which optionally comprise, on at least some of their individual units, at least one substituent of the group comprising sulfate, methyl and acetyl groups, said substances which are capable of
 20 modifying apoptosis dysfunctions being chosen from the group comprising :
 - the oligosaccharides which are derived, by enzymatic or chemical process, from the polymers of the group comprising (1→3)-β-glucans which optionally
 25 comprise (1→6)-β- branching, and
 - the oligosaccharides which are derived, by enzymatic or chemical process, from carrageenans, from agars and from porphyrans.
9. Use, with a view to preparing a medicine for
 30 treating apoptosis dysfunctions, of the oligosaccharides

of formula (I) and of those of formula (II).

10. Use of the products which are referred to as I₉ and L₁₁ and of the product constituting fraction DP 7 of the product I₉ according to Claim 4 with a view to
5 preparing medicines for treating apoptosis dysfunctions.